

Application No.: 10/600,948
Amendment Dated: March 22, 2007
Reply to Office Action Dated: January 4, 2007

REMARKS

In a non-final Office Action mailed January 4, 2007, the Examiner in charge of the above-identified application objected to the specification and rejected the claims for a variety of reasons, including 35 U.S.C. §§ 101 and 112. Applicants respond to the Examiner's objection and rejections below. In view of the amendments noted above and the remarks presented herein, applicants respectfully request reconsideration of the merits of this application.

Objections to Specification

The Examiner requested that the "Cross Reference to Related Applications" section be updated to recite the patent number of the parent case. Likewise, the Examiner requested that the "Statement Regarding Federally Sponsored Research or Development Section" be updated to reflect whether actual government funding was used in the development of the claimed invention. Applicants provide appropriate correction to both sections. Further, applicants submit that no new matter is introduced with these amendments.

Claim Rejections - 35 U.S.C. § 101

The Examiner rejected Claims 27-28 under 35 U.S.C. § 101 for being directed to non-statutory subject matter. Specifically, the Examiner alleged that the phrase "genetic construct" is not specifically defined in the above-identified application and as such may encompass a gene naturally occurring within a genome of a plant (i.e. read upon products of nature). Applicants amend Claim 27 to recite that the protein coding sequence for FLC2 is "isolated," thereby indicating to one skilled in the art that it is not naturally occurring. Support for this amendment is located in the above-identified application at p. 9, line 8 to p. 10, line 30. Applicants also cancel Claim 28, as it appears to duplicate Claim 29. In view of the amendments, applicants respectfully request reconsideration of this rejection as applied to Claim 27.

Claim Rejections - 35 U.S.C. § 112, second paragraph

The Examiner rejected Claims 21-30 under 35 U.S.C. § 112, second paragraph for indefiniteness. First, the Examiner alleged that the word "FLC2" or the phrase "Flowering

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Locus C2" is unclear, as each does not distinguish FLC2 from FLC1 or FLC3. Applicants respectfully disagree. In particular, applicants note that FLC1, FLC2 and FLC3 are distinguishable by their polynucleotide and polypeptide sequences, which were included in the Sequence Listing submitted in connection with the above-identified application. Applicants submit that SEQ ID NOS: 1-2 disclose the polynucleotide and polypeptide sequences for FLC1, respectively; SEQ ID NOS: 3-4 disclose the polynucleotide and polypeptide sequences for FLC2, respectively; and SEQ ID NOS: 5-6 disclose the polynucleotide and polypeptide sequences for FLC3, respectively (as noted in the parent case, U.S. Patent No. 6,693,228, column 4, lines 48-55). A request for appropriate correction of the specification to recite the SEQ ID NOS is provided below. As such, one skilled in the art can readily distinguish FLC2 from FLC1 and FLC3 not only by polynucleotide sequence, but also by polypeptide sequence. In addition, applicants amend Claim 21 to recite that the FLC2 gene encodes a polypeptide comprising SEQ ID NO:4. The amendments therefore distinguish the claims from FLC1 and FLC3.

Second, the Examiner alleged that Claims 23, 27 and 29-30 are unclear for reciting a protein coding region for FLC2 proteins having at least 50% identity to SEQ ID NO:4 outside a MADS box domain; however, the specification indicates that FLC1 has 50% identity to FLC2 outside the MADS box domain. Applicants amend Claims 23, 27 and 29-30 to recite that the identity between FLC2 proteins be at least 70% to SEQ ID NO:4. Support for this amendment is located on p. 15, lines 8-10 of the above-identified application. As noted in the above-identified application, the MADS box is the first 60 amino acids of the amino terminal end of SEQ ID NO:4. *See* p. 7, lines 17-19. As amended, the claims require that the 70% similarity be restricted to amino acids 61-173, as SEQ ID NO:4 is 173 amino acids in length. Consequently, two FLC2 proteins are required to have at least 79 amino acids similar. Applicants submit that one skilled in the art understands that simple conservative substitutions (i.e. replacing neutral, polar or non-polar amino acids with like amino acids) could be made within such a limited number of amino acids and still result in a polypeptide having FLC2 activity. As such, the range of peptides is dramatically narrowed by the amendment.

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Third, the Examiner alleged that Claim 22 is indefinite because it is unclear if a seed comprises a transgene. Applicants amend Claim 22 to recite that the seed comprises the transgene.

Fourth, the Examiner alleged that phrase "the sequence" renders Claim 25 indefinite because it is unclear whether the phrase refers to the "isolated nucleotide sequence" or to the "coding sequence." Applicants amend Claim 25 to recite that the sequence is the isolated nucleotide sequence.

Fifth, the Examiner alleged that the phrase "the sequence" renders Claim 26 indefinite because it is unclear whether the phrase refers to the "isolated nucleotide sequence" or to the "coding sequence." Applicants amend Claim 26 to recite that the FLC2 protein is defined by SEQ ID NO:4. In view of these remarks and amendments, applicants respectfully request reconsideration of these rejections as applied to Claims 21-30.

Claim Rejections - 35 U.S.C. § 112, first paragraph

The Examiner rejected Claims 21-24 and 27-30 under 35 U.S.C. § 112, first paragraph for failing to comply with the written description requirement. Specifically, the Examiner alleged that the claims encompass plants, seeds and genetic constructs having any FLC2 gene. With respect to Claims 21-22, applicants believe that the amendment to Claim 21 noted above renders this rejection moot, as the FLC2 gene encodes a protein having SEQ ID NO:4. With respect to Claims 23-24, 27 and 29-30, applicants believe that the amendments to Claims 23, 27 and 29-30 render this rejection moot. As such, the claims now encompass a narrower range of FLC2 polynucleotides and polypeptides within SEQ ID NO:4. In view of these remarks and amendments, applicants respectfully request reconsideration of this rejection as applied to Claims 21-24 and 27-30.

In addition, the Examiner rejected Claims 21-24 and 27-30 under 35 U.S.C. § 112, first paragraph for failing to comply with the enablement requirement. Specifically, the Examiner alleged that specification does not enable one skilled in the art how to obtain a polypeptide that differs by as much as 50% from SEQ ID NO:4. As noted above, applicants amend the claims to recite that the sequences are at least 70% identical (and therefore can vary by only 30%). In view of these remarks and amendments, applicants respectfully request reconsideration of this rejection as applied to Claims 21-24 and 27-30.

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Accordingly, applicants respectfully request that in view of these claim amendments and remarks, the rejection be respectfully reconsidered, withdrawn and that a timely Notice of Allowance be issued in this case.

Other Remarks

Applicants amend the third paragraph of p. 6 to include the SEQ ID NOS for the genes referred to in that paragraph. Likewise, applicants amend the second full paragraph on p. 7 to include the SEQ ID NOS for the gene and amino acid sequences. Support for these amendments are located in the parent case, U.S. Patent No. 6,693,228.

Fees

No fee is believed due in connection with this submission. However, if a fee is due, in this or any subsequent response, please charge the fee to Deposit Account No. 17-0055. Likewise, no extension of time is believed due, but should any extension be required in this or any subsequent response, please consider this to be a petition for the appropriate extension of time and a request to charge the petition fee due to the same Deposit Account.

Respectfully submitted,

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